

Animal Health Diagnostic Center

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AHDC FACT SHEET

Transtracheal Wash Procedure for Cattle and Horses

The goal is to obtain an aseptically-collected diagnostic specimen from the lower trachea for:

- Gram stain
- Bacterial culture
- Virus isolation
- Some Viral Fluorescent Antibody (FA) tests
- PCR (Polymerase Chain Reaction) tests
- Parasitology (Lungworms)
- Cytology (At this time, cytology exams are referred to another laboratory.)

Please refer to the website (<https://ahdc.vet.cornell.edu>) or call the NYS Animal Health Diagnostic Laboratory at 607-253-3900 for additional details on tests, fees, and appropriate packaging and shipping.

Materials needed:

- **Sedative as needed** to achieve standing restraint
- Restraint equipment, as needed (e.g. halter, headlock, nose lead)
- **2% Lidocaine hydrochloride**
- **#15 scalpel blade**, optional, depending on size of needle or catheter used
- **#40-bladed clippers and surgical scrub materials**
- **12 ga 2-3" non-disposable sterile needle***
- **#5 French Canine urinary catheter or suitable sterile tubing** (stiff, 45cm for calves and foals, 100 cm for adults) *
- **Sterile saline 50 - 100 mls**
- **20 - 60cc syringe** (and needle to withdraw saline)
- **Sterile gloves**
- **2-3 sterile red-topped vacutainer tubes** (7-10ml)
- **1 small EDTA tube** (3ml) (for cytology, only)
- **Several glass slides** (for cytology) and slide mailer

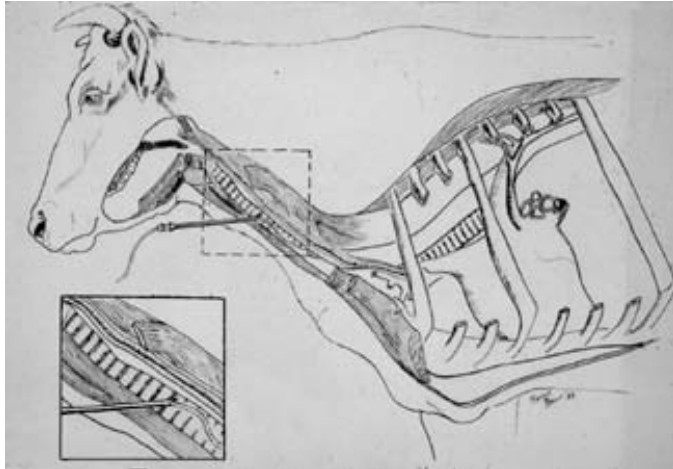
*Other suitable materials may include sterilized fine bore polyethylene tubing, with a needle or catheter of a size through which it can be easily passed. Some suppliers may have additional materials. Jorgensen Laboratories sells a kit (J-283 Tracheal Wash Kit) that could be used for cattle or small ruminants.

See next page for detailed transtracheal wash procedures.

Transtracheal Wash Procedure

- Adequately restrain animal with sedative and halter, nose lead, head lock, etc., as required to immobilize the animal in a standing position with head and neck elevated and stretched forward. Avoid excessive elevation, especially in animals with severe respiratory compromise.

- Palpate the ventral neck and select the location halfway between the larynx and where the tracheal rings can no longer be felt because of overlying musculature. Clip and surgically prepare this site. Assemble all materials, including syringe-full of saline (15 – 20 mls for young foal or calf, 40-50 ml for adult horse or cow). Don gloves.



- Infiltrate selected puncture site with 2-5ml 2% lidocaine. A small stab incision just through the skin, using the scalpel blade, will facilitate large bore needle puncture. The needle or catheter trocar is then inserted on the ventral midline, while stabilizing the trachea with the other hand, and passed into the tracheal lumen between two tracheal rings. Air can be heard or felt flowing through the needle at this time. The needle is then advanced, pointed distally toward the lungs. Thread the catheter or sterile tubing into the needle and toward the lungs a variable distance (attempt to reach thoracic inlet). If the catheter is not stiff enough, coughing by the animal may flip the tip toward the larynx, resulting in a pharyngeal wash.

- Inject the sterile saline through the catheter into the trachea. After injecting, immediately begin aspirating, in an attempt to recover at least 3-5 ml of fluid. Manipulation of the catheter a few centimeters proximally or distally may assist recovery. If recovery is unsuccessful, inject an additional amount of saline equal to the first volume used. Obtain 10 – 20 ml fluid, if possible, which should be adequate for all diagnostic procedures.

- **First, withdraw the needle or catheter trochar**, until the sharp end is completely out of the skin and the catheter is visible between the tip and skin. Now withdraw the catheter or tubing the rest of the way. This helps prevent cutting off the catheter while it is in the airway. Should this occur, the animal coughs up the catheter into the pharynx within minutes. Some clinicians prefer to infiltrate the punctured subcutaneous area with a small amount of antibiotic or treat with systemic antibiotics to prevent cellulites. This is not generally reported as a complication of the procedure.

- For best cytologic evaluation, make a few glass slides, similar to preparing blood smears, at the time of the procedure, and air dry. Also, put a small volume (2-3 ml) into an EDTA tube. Gently express the remaining contents of the syringe into sterile red-topped vacutainer tubes and place on ice or refrigerate. Transport the sample refrigerated, and ship, appropriately packaged, by overnight delivery service, to the laboratory.